

GEOMETRY UNIT 8 WORKSHEET #6 REVIEW 8.1-8.3

TARGETS A & B

Find the following for each regular polygon A) Sum of Interior Angles, B) One Interior Angle, C) Sum of Exterior Angles, & D) One Exterior Angle.

1. Nonagon $n = 9$
- A. Sum Int. = 1260°
- B. One Int. = 140°
- C. Sum Ext. = 360°
- D. One Ext. = 40°

2. 18-gon
- A. Sum Int. = 2880°
- B. One Int. = 160°
- C. Sum Ext. = 360°
- D. One Ext. = 20°

$$(18-2) \cdot 180 = 2880$$

$$\frac{2880}{18} = 160^\circ$$

Find the number of sides for a polygon given the sum of its interior angles.

3. 900 $\frac{(n-2) \cdot 180 = 900}{180} \quad \frac{900}{180} = 5$
 $n-2 = 5$
 $n = 7$
 # sides = 7

4. 1800 $\frac{1800}{180} = 10$
 $(n-2) = 10$
 $n = 12$
 # sides = 12

5. 3600 $\frac{(n-2) \cdot 180}{180} = 20$
 $n-2 = 20$
 $n = 22$
 # sides = 22

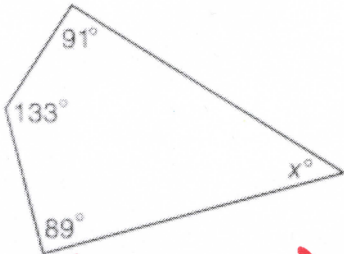
Find the number of sides for a regular polygon given one exterior angle.

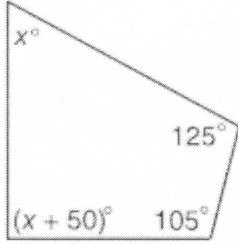
6. 36 $\frac{360}{36} = 10$
 # sides = 10

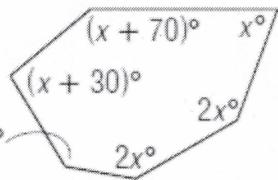
7. 24 $\frac{360}{24} = 15$
 # sides = 15

8. 20 $\frac{360}{20} = 18$
 # sides = 18

Solve for x.

9. 
- $$360 - (89 + 133 + 91) = x$$
- $$360 - 313 = x$$
- $$x = 47^\circ$$

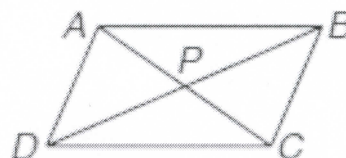
10. 
- $$x + (x+50) + 105 + 125 = 360$$
- $$2x + 280 = 360$$
- $$2x = 80$$
- $$x = 40^\circ$$

11. $n = 6 \quad \sum \angle s = 720^\circ$
- 
- $$x + 2x + 2x + (2x-10) + (x+30) + (x+70) = 720$$
- $$9x + 90 = 720$$
- $$9x = 630$$
- $$x = 70^\circ$$

TARGET C

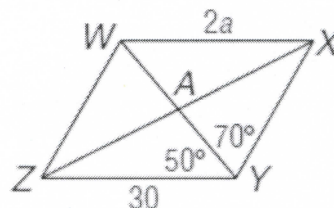
Complete each statement if ABCD is a parallelogram.

12. $\overline{AB} \parallel \underline{\overline{DC}}$ 13. $\overline{BC} \cong \underline{\overline{AD}}$
 14. $\overline{AP} \cong \underline{\overline{PC}}$ 15. $\angle ABC \cong \underline{\angle ADC}$
 16. $\angle ADC + \underline{\angle DAB} = 180^\circ$
 $\underline{\angle ADC + \angle DCB = 180^\circ}$



Solve for the following given WXYZ is a parallelogram.

17. $a = \underline{15}$ 18. $\angle ZWX = \underline{120^\circ}$ (70 + 50 = 120)
 19. $\angle YXW = \underline{60^\circ}$ (180 - 120 = 60) 20. $\angle YWX = \underline{50^\circ}$



Solve for the variables for each parallelogram.

21. $5y = 60$, $y = 12$
 $(3x + 60) + 60 = 180$
 $3x + 120 = 180$
 $3x = 60$
 $x = \underline{20^\circ}$ $y = \underline{12^\circ}$
22. $2x = 24^\circ$, $x = 12^\circ$
 $x + y = 20$
 $12 + y = 20$
 $y = 8$
 $x = \underline{12^\circ}$ $y = \underline{8^\circ}$
23. $y + 23 = -4y - 2$, $-2x + 6 = x + 12$
 $5y + 23 = -2$, $6 = 3x + 12$
 $5y = -25$, $-6 = 3x$
 $y = -5$, $x = -2$
 $x = \underline{-2}$ $y = \underline{-5}$

TARGET D

Are the following parallelograms? Explain why or why not.

24. yes or no DEFN. OF \square - BOTH SETS OPPOSITE SIDES ARE \parallel

25. yes or no DIAGONALS BISECT EACH OTHER

26. yes or no \parallel AND \cong HAS TO BE SAME SIDES